STIC Biotechnology Systems Branch

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FOR CRF SUBMISSION AND PATENTIN SOFTWARE QUESTIONS, PLEASE CONTACT MARK SPENCER, TELEPHONE: 571-272-2510; FAX: 571-273-0221

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http://www.uspto.gov/web/offices/pac/checker/chkrnote.htm

Applicants submitting genetic sequence information electronically on diskette or CD-Rom should be aware that there is a possibility that the disk/CD-Rom may have been affected by treatment given to all incoming mail. Please consider using alternate methods of submission for the disk/CD-Rom or replacement disk/CD-Rom. Any reply including a sequence listing in electronic form should NOT be sent to the 20231 zip code address for the United States Patent and Trademark Office, and instead should be sent via the following to the indicated addresses:

- 1. EFS-Bio (http://www.uspto.gov/ebc/efs/downloads/documents.htm, EFS Submission User Manual ePAVE)
- 2. U.S. Postal Service: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450
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Revised 01/24/05



PCT

RAW SEQUENCE LISTING DATE: 09/12/2005
PATENT APPLICATION: US/10/531,870 TIME: 13:21:40

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Output Set: N:\CRF4\09122005\J531870.raw

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C--> 9 <141> CURRENT FILING DATE: 2005-04-19
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71 atqc

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RAW SEQUENCE LISTING DATE: 09/12/2005
PATENT APPLICATION: US/10/531,870 TIME: 13:21:40

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RAW SEQUENCE LISTING DATE: 09/12/2005 PATENT APPLICATION: US/10/531,870 TIME: 13:21:40

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Output Set: N:\CRF4\09122005\J531870.raw

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DATE: 09/12/2005

TIME: 13:21:40

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/531,870

60 120

180

RAW SEQUENCE LISTING DATE: 09/12/2005 PATENT APPLICATION: US/10/531,870 TIME: 13:21:40 Input Set : A:\764765 1.txt Output Set: N:\CRF4\09122005\J531870.raw 240 301 atcqaaaccq qtqaaqtqqt tqaaqqtacq aaaaagccct cctccqacac qccaactcac 303 eggetgetet ateaggeatt eccetecatt ggeggeattg tgeataegea etegegeeae 300 305 gccaccatct gggcgcaggc gggtcagtcg attccagcaa ccggcaccac ccacgccgac 360 307 tatttctacg gcaccattcc ctgcacccgc aaaatgaccg acgcagaaat caacggcgaa 420 309 tatgagtggg aaaccggtaa cgtcatcgta gaaacctttg aaaaacaggg tatcgatgca 480 311 gegeaaatge ceggegttet ggteeattee caeggeeegt ttgeatgggg caaaaatgee 540 313 gaagatgegg tgcataacge categtgetg gaagaggteg ettatatggg gatattetge 600 315 cqtcaqttaq cqccqcaqtt accqqatatq cagcaaacqc tqctqqataa acactatctq 660 696 317 cgtaagcatg gcgcgaaggc atattacggg cagtaa 320 <210> SEQ ID NO: 20 321 <211> LENGTH: 687 322 <212> TYPE: DNA 323 <213> ORGANISM: Escherichia coli 325 <400> SEQUENCE: 20 326 atgcaaaagc taaaacagca ggtatttgaa gccaacatgg agctgccgcg ctacgggctg 60 328 gtgaccttta cetggggcaa egteageget ategacegeg aaegeggget ggtggtgate 120 330 aagcccagcg gcgttgccta cgaaaccatg aaagcggccg atatggtggt ggttgatatg 180 240 332 ageggeaagg tggtggaagg ggagtatege ceatetteeg acaetgegae geatetegaa 334 ctctaccgtc gttacccgtc gcttggtggc attgtccata cccactccac tcatgccacc 300 336 gcatgggcgc aggcggggct ggcgatcccg gcgttaggca ccacgcacgc cgactacttc 360 420 338 tttggcgaca ttccgtgtac gcgcgggtta agcgaagaag aggtgcaggg cgagtatgaa 480 340 ctgaacaccg gcaaagtgat tatcgaaacg ctgggcaacg ccgagccgct gcatacgccg 342 ggaattgtgg tgtatcagca cgggccgttc gcctggggga aagatgctca cgatgcggtg 540 344 cataacgegg tggtgatgga agaagtggeg aaaatggegt ggattgeeeg eggeattaac 600 660 346 ccacaactca atcacatcga cagcttcctg atgaataaac acttcatgcg taaacacggt 687 348 cctaacgctt attacgggca gaagtag 351 <210> SEQ ID NO: 21 352 <211> LENGTH: 65 353 <212> TYPE: DNA 354 <245 ORGANISM (Artificial sane eur W--> 356/<220> FEATURE: W--> 356 223 OTHER INFORMATION: W--> 356 <400> 21 60 357 cagcaggtat ttgaagccaa catggagetg cegegetaeg ggetggtgta ggetggaget 65 359 gcttc 362 <210> SEQ ID NO: 22 363 <211> LENGTH: 66 364 <212> TYPE: DNA 365 <2/2 ORGANISM: (Artíficia W--> 367 **₹220>\FEATURE**: W--> 367 (<223 \Rightarrow) OTHER INFORMATION: W--> 367 < 400 > 2260 368 aaacggctgc ggaattagac cagttatctc ccgaggaagg aaattaattc cggggatccg 370 tcgacc 66 373 <210> SEQ ID NO: 23 374 <211> LENGTH: 21 375 <212> TYPE: DNA 376 <213 ORGANISM: Artificia W--> 378/<220>) FEATURE: end occur in subsequent sequences

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 09/12/2005 PATENT APPLICATION: US/10/531,870 TIME: 13:21:41

Input Set : A:\764765 1.txt

Output Set: N:\CRF4\09122005\J531870.raw

Invalid <213> Response:

Use of "Artificial" only as "<213> Organism" response is incomplete, per 1.823(b) of New Sequence Rules. Valid response is Artificial Sequence.

Seq#:18,21,22,23,24,26,27,28,29

Use of <220> Feature (NEW RULES): Un Uplanation Sequence (s) are missing to Sequence(s) __are missing the <220> Feature and associated headings. Use of <220> to <223> is MANDATORY if <213> ORGANISM is "Artificial Sequence" or"Unknown". Please explain source of genetic material in <220> to <223> section (See "Federal Register," 6/01/98, Vol. 63, No. 104,pp.29631-32) (Sec.1.823 of new Rules)

Seg#:18,21,22,23,24,26,27,28,29

VERIFICATION SUMMARY DATE: 09/12/2005 PATENT APPLICATION: US/10/531,870 TIME: 13:21:41

Input Set : A:\764765 1.txt

Output Set: N:\CRF4\09122005\J531870.raw

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